> which manual handling of orders is required by design because mechanization is not technologically possible or would be too costly to be efficient.[32]

The notion here is apparently that the latter kind of costs would be normal provisioning costs instead of service order fallout costs. Verizon does not reflect legitimate designed manual provisioning costs as opposed to order fallout in its study.

For instance, AT&T/WorldCom asked Verizon to explain why its non-recurring cost model did not reflect the manual activities that Verizon's NRC Panel claimed were necessary in its example at page 13 of its rebuttal testimony:

> One example would be the assignment of facilities needed for the installation of a new DS1 loop. DS1 facilities in the local loop are not inventoried in Verizon's Loop Facility Assignment and Control System (LFACS) because that system is not equipped to handle the demands of multi-channel facilities like a DS1. As a result, orders for DS1 loops are directed to the Mechanized Loop Assignment Center (MLAC) and are then forwarded to the Outside Plant Engineer for manual handling.

AT&T/World Com specifically asked Verizon to explain why the Engineer's time was not reflected in its non-recurring cost study. Verizon replied:

> The activity of the outside plant engineer in assigning a facility for the DS1 most resembles the functions performed by CPC [Circuit Provisioning Center], though it is performed primarily in the local loop. That activity, therefore, is described by

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32 Verizon NRC Panel Rebuttal at 13.

> the CPC work steps of the Verizon VA [non-recurring cost model].[33]

The tasks that were identified for the "DS1 loop" involved CPC and were:

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The activities identified by Verizon do not resemble the activities to process this CLEC request as Verizon claims. The work performed by the Engineer is far different from the work performed by the CPC. As an example the Engineer would use cable layout drawing and plant records in the selection process, to which the CPC technician has no such access. Verizon's unidentified experts that purposely identified all of the tasks necessary to provision a request did not identify this activity being performed by the MLAC, nor did they identify the involvement of the Engineering personnel.

The forward-looking adjustments applied to CPC task #1 indicate 67% percent manual activity. That number proves AT&T/WorldCom's point, that

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33 Verizon's Response to AT&T/WCOM 10-146. Thus, contrary to its assertions, Verizon has failed to use actual work times to substantiate its claim that manual handling is (continued)

these tasks can be accomplished automatically and do not require manual tasks every time as Verizon would have this Commission believe. The inverse of this 67% manual intervention incidence rate is a 33% flow through rate, which establishes that the OSS is capable of performing the assignment without manual intervention. The fallout claimed by Verizon represents situations where the database reflects neither the actual plant, nor the plant produced by the recurring cost model. The consequence is that Verizon must perform some manual database maintenance to update the OSS to reflect the plant conditions. The CLEC is not the cost causer in these cases. Verizon is responsible for maintaining its database(s) properly, and must bear the costs if it fails to do so. Furthermore, once the plant (*e.g.*, the interoffice paths) have been properly reflected in the TIRKS database, they are available to allow the future flow through of any additional requests including requests for similar services of Verizon's retail customers.

Q. DID VERIZON PROVIDE ACTUAL EXAMPLES OF THE FALLOUT FROM OSS THAT IT CLAIMS?

A. No. AT&T/WorldCom requested that Verizon provide the outputs from various order types to substantiate the types of fallout and manual activity it claims.[34] Specifically, AT&T/WCOM 9-35-c requested the OSS output that would be sent

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necessary for this task.

to the CPC-Specials workgroup. Instead of providing the requested evidence, Verizon merely made another objection, pointing to the Verizon non-recurring cost model as justification, and thus provided no information to support its contention that this fallout must occur.[35]

The OSS processing reports produced by the order types requested would have indicated the level of manual involvement needed to process the orders. In addition, they would have shown that the manual resolution involved is only performing database updates—a recurring cost activity. This discovery question was an opportunity for Verizon to substantiate its claims, but the reply was another indication of how little Verizon's non-recurring cost study reflects actual conditions expected of the OSS. To date, Verizon has not provided information to support its contention that this fallout must occur.

Verizon's refusal to produce information directly from the ordering process renders hollow and unsubstantiated its arguments that activities either

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34 *See* AT&T/WCOM 9-35.

35 Verizon's Response to AT&T/WCOM 9-35-c states: "Verizon VA objects to each of the elements of this request on the grounds that the request is not material or relevant to this proceeding or, indeed, likely to lead to the discovery of relevant or material evidence. Further, it is not clear what purpose is served by providing OSS data the results of which are already shared with the CLECs on a daily, even hourly, basis, in the normal course of installing unbundled elements. The model already identifies the functions and activities associated with the processing of CLEC requests for service and the associated costs. In addition, UNEs 84 and 86, listed in the request, are not tariffed items. Also, UNEs 17, 19 and 21 have, in fact, yet to be ordered and, therefore, do not have "actual orders" that can be identified."

cannot be mechanized or can only be mechanized at too high a cost. The reality is that many of these activities are mechanized; Verizon simply assumes that other activities should be handled manually for CLEC orders despite the requirement that non-recurring costs should be based on forward-looking, economically efficient assumptions.

Q. IN CONTRAST TO VERIZON'S NON-RECURRING COST STUDY, WHAT APPROACH DID AT&T/WORLDCOM FOLLOW FOR DETERMINING NON-RECURRING COSTS?

A. As Mr. Walsh explained in his direct testimony and supporting documentation, AT&T/WorldCom's NRCM began with the identification of all activities necessary for each UNE requested in a forward-looking network. Utilizing a forward-looking cost methodology, the AT&T/WorldCom NRCM develops a "bottoms-up" estimate of non-recurring costs. A "bottoms-up" cost estimate assembles the real time cost of each activity *in a process* to arrive at the overall cost of delivering a service. The AT&T/WorldCom NRCM provides a detailed step-by-step understanding of the systems required and the manual work activities performed by an ILEC in the ordering and provisioning of wholesale services and unbundled network elements. The model is designed to reflect the most efficient management and operations of existing ILEC OSSs. The activities are listed as outputs of the model, which are open for public scrutiny.

Exhibit NRC-1 to this testimony highlights the major differences between models. The AT&T/WorldCom NRCM shows the processing steps including those steps necessary in Pre-Ordering, Service Ordering, and Provisioning. Each step within the process has a classification of cost, and those costs that are not truly non-recurring are indicated with an "R" to reflect that the costs are recovered elsewhere. The function of the OSS is reflected to show what processing takes place automatically. Surrebuttal Exhibit NRC-1 includes printouts of these steps in the respective models for the DS1 loop element.

The output of Verizon model for the same element, also shown in Exhibit NRC-1, reflects the activities of the various workgroups as a whole without consideration of the functions that take place automatically by the OSS. Without understanding the internal workings of the OSS, one would assume the entire process is manual.

Q. VERIZON ASSERTS THAT AT&T/WORLDCOM'S 2% FALLOUT FOR PROVISIONING IS UNREALISTIC, IN PART BECAUSE IT FAILS TO TAKE INTO ACCOUNT THE LIKELY FALLOUT FROM THE MANY ADDITIONAL STEPS REQUIRED FOR COMPLEX PROVISIONING.[36] DO YOU AGREE?

A. No. As we stated in direct and reply testimonies, manual intervention due to OSS fallout must be examined from the perspective of resolution of that fallout. If the resolution is not the result of a limitation of the OSS software, or a result of CLEC-caused errors, then the fallout should not be a non-recurring cost.

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36 Verizon NRC Panel Rebuttal at 14.

In support of its claims that additional steps are needed by the RCCC, Verizon states:

> For example, based on empirical data, the RCCC needs to manually resolve roadblocks on an order for a Four-Wire Loop UNE about 25% of the time.[37]

This, however, is yet another unsubstantiated claim by Verizon for a non-recurring cost, which is entitled to little or no weight. In response to a request to provide all empirical data that supports its assertion that the RCCC must manually resolve roadblocks on an order for a Four-Wire Loop UNE, Verizon provided no evidence and instead relied upon the circular argument that its surveys *are* the proof, and that regardless of whom the cost causer is, Verizon is entitled to recover the cost from the CLEC.[38]

In particular, Verizon's response to AT&T/WCOM 10-147 indicated, "typically, roadblocks are the result of requests/orders that are written incorrectly

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37 Verizon NRC Panel Rebuttal at 15.

38 Verizon's Response to AT&T/WCOM 10-147 reads: "The empirical data is reflected in the results of the time surveys conducted for the RCCC function and in the occurrence factors documented in the model.

i. Roadblocks include any problem preventing the successful completion of the CLEC request related to the ordering or provisioning process. Typically, roadblocks are the result of requests/orders that are written incorrectly or incorrect facility/CFA assignments.

ii. Requests/orders may be written incorrectly by either the CLEC or Verizon VA. Incorrect facility assignments may result from CLEC or Verizon problems. In either case, the roadblock must be resolved in order to provision the request and is the simply the cost of doing business and a normal manifestation of operating a complex telecommunications network."

or [have] incorrect facility/CFA assignments." But, the RCCC would have little to do with discovering a roadblock for a Four-Wire Loop UNE, as we explained in our reply testimony, because it would be the central office ("CO") Frame technician who first discovers an incorrect facility/CFA assignment. It is far more efficient for the CO Frame technician to convey the incorrect information directly back to the Order's originator (the CLEC) via a jeopardy notice. Verizon's response to this discovery response demonstrates that the RCCC is just another unnecessary layer of cost.

Q. VERIZON CLAIMS THAT IT IS UNAWARE OF ANY OSS THAT WOULD BE ABLE TO SUPPORT A FALLOUT RATE OF 2%.[39] PLEASE RESPOND.

A. Verizon's assertion is irrelevant and indicates Verizon's failure to understand TELRIC. The relevant questions are: What fallout is forward looking? What fallout is attributable to CLECs? What fallout results in a non-recurring cost?

Fallout in itself does not necessarily result in a non-recurring cost. What is important about fallout is the cause of the fallout and the resolution taken to resolve the fallout. If the CLEC caused the fallout (*e.g.*, by supplying incorrectly formatted data or error in content, resulting in a manual work necessary to resolve the fallout), then this would warrant a non-recurring cost. This follows because

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39 Verizon NRC Panel Rebuttal at 15.

there is a cost associated with notifying the CLEC that processing cannot continue unless the errors are resolved.

Verizon has not stated the percent of fallout that happens under this condition. Instead Verizon points to the *CLEC order* as the cause of the fallout. This is not a valid approach because, although the CLEC order may trigger the fallout, that is only because it brings to light the conditions of the ILEC's OSS that prevented the order from flowing through on its own. The ILEC must share in the costs of these conditions, through a recurring charge.

Mr. Walsh described four major categories[40] of electronic flow-through provisioning fallout. The categories are important because they point to the true cost causer—in most cases the ILEC. Verizon has not refuted this categorization, nor has it shown why the fallout in its model is caused by CLECs.

Q. VERIZON ARGUES THAT THE AT&T/WORLDCOM 2 % FALLOUT ASSUMPTIONS ARE INCORRECT BECAUSE SYSTEMS SUCH AS (SWBT) EASE SYSTEM OR PIC CHANGES HAVE LITTLE TO DO WITH WHOLESALE UNES. PLEASE RESPOND?

A. The OSS or technologies used to develop these systems are good examples of how companies can address situations to obtain increased flow-through processing. They are examples that were never intended to be directly applicable

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40 As discussed in the Direct Testimony of Richard J. Walsh at 16, there are four major categories of electronic flow-through provisioning fallout: 1) Database synchronization errors, 2) Network element denial 3) Communication errors, and 4) Synchronization errors.

to the wholesale provisioning of UNEs. Verizon's criticisms miss the point we established regarding fallout and its resolution. The mere fact that fallout happens is not a justification for a non-recurring charge. If it were, then ILECs could choose to process all requests manually by establishing conditions in which they ensure that fallout happens, such as the case where the TISOC manually handles orders for five or more loops. As AT&T/WorldCom has already established, policies such as these do not convert activities to non-recurring costs. In order for any fallout to be considered a non-recurring cost, the product of its resolution needs to be clearly established. If the resolution involves updates of data to systems where Verizon will reuse this data, then it is classified as a recurring cost, because it is a database maintenance activity.

Q. VERIZON ALSO POINTS OUT THAT THE AT&T/WORLDCOM NRCM SPONSORS DID NOT BELIEVE "A 1-2% FLOW THROUGH PERFORMANCE [WAS] 'DO-ABLE' IN THE FORESEEABLE FUTURE."[41] PLEASE RESPOND.

A. First we need to clarify what Verizon addresses. It is not a 1-2% flow through performance, it's a 1-2% fallout rate. Verizon has misinterpreted the events and discussion that ensued at the Denver forum. AT&T/WorldCom model developers addressed all such concerns and reached a consensus that the model portrayed proper non-recurring cost activities.

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41 Verizon NRC Panel Rebuttal at 15.

The AT&T/WorldCom model developers came from telecommunications industry, which experienced the day-to-day activities involved with provisioning ILEC retail services. During their professional careers, they witnessed the progression of OSS installations that were not synchronized with the conditions of the plant. Therefore, they saw many situations where conditions of the databases caused fallout to happen. How fallout activities related to cost classifications needed to be explained, because they were from technical backgrounds. This consensus was reached after discussions to which Verizon refers It was concluded that, not only could fallout be avoided by proper database maintenance, but that the cost of fallout resolved through database maintenance is recurring cost. Any residual fallout, caused by CLECs would have a minimal occurrence factor. For these reasons, once the understanding that database maintenance activities were properly identified as recurring cost, members of the AT&T/WorldCom NRCM team agreed that 2% fallout was a conservative number.

Q. VERIZON ASSERTS THAT "THE RCCC PLAYS IMPORTANT ROLES IN THE PROVISIONING OF NEW UNE LOOPS TO CLECS, AS WELL AS IN THE COORDINATION OF CRITICAL REAL-TIME EVENTS IN THE MIGRATION OF EXISTING VERIZON VA RETAIL CUSTOMERS TO CLECS VIA THE HOTCUT PROCESS." IS THE RCCC AS NECESSARY AS VERIZON CLAIMS?

A. No. As the AT&T/WorldCom Panel Reply on Non-Recurring Costs and Advanced Data Services pointed out, there are serious flaws with the RCCC activities represented in the Verizon non-recurring cost model. The most serious are the assumptions regarding the RCCC involvement when facilities are being reused and the administrative role that they play in providing the so called "critical real-time events in the migration of existing Verizon VA retail customers to CLECs via the hotcut process."[42]

The methods that AT&T/WorldCom suggested as a better process for migrating customers services to the CLEC have not been refuted by Verizon. The process we describe is better, in part, because it shows how little manual labor, from the RCCC or otherwise, should be needed. Verizon's process is far more labor intensive, shifts control to a department that is unequipped to discover such problems, and disrupts the efficient work activities that would be available with existing OSS.

Substantial unnecessary costs reflected in Verizon's study are the costs of manual coordination. In Verizon's study, this coordination effort is provided by the RCCC work group. The RCCC does not fulfill a single physical task that is actually required to provision service, but is simply an awkward group that was created as an overlay to a normally mechanized flow of non-recurring work activity. Clearly, costs of manual coordination, which are derived from unnecessary human intervention, are not forward-looking.

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42 Verizon NRC Panel Rebuttal at 23.

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Coordination of provisioning activities is one of the basic capabilities of modern OSS, and a forward-looking cost study must recognize this. AT&T/WorldCom presented an efficient forward-looking migration process, which demonstrated costs as indicated above are unnecessary. The almost ***BEGIN VERIZON PROPRIETARY END VERIZON PROPRIETARY*** of RCCC involvement Verizon claims will be necessary for every request is by no means forward looking because a forward-looking process was never established.

Q. CAN YOU DETERMINE THE RCCC FALLOUT RATE ASSOCIATED WITH THE FOUR-WIRE LOOP USED IN VERIZON'S EXAMPLE?

A. Not easily. This is because Verizon's non-recurring cost model does not identify the end-to-end process by which UNEs are provisioned and for which manual activity Verizon asserts is necessary. Verizon's cost study does not reflect any processing that is being performed automatically by the OSS. As we discussed previously, AT&T/WorldCom requested that Verizon provide the OSS output of various orders indicating the involvement of the RCCC. Verizon objected to this request as well.

In yet another discovery question AT&T/WorldCom asked Verizon to explain how the RCCC technician can identify design problems as indicated by RCCC task #6 "Contact CPC to resolve design problems." The request asked Verizon to explain why there is no corresponding CPC cost associated with the RCCC task #6. Verizon's reply to subpart c of this question stated that "Design problems referenced in RCCC task "#6 relate to any possible design problem preventing the successful completion of the CLEC request related to the ordering or provisioning process."[43] This answer makes no sense. It is analogous paying for car repairs without ever knowing whether the cause of the problem was caused by the manufacturer or covered under warranty. Verizon has done nothing to demonstrate the nature and cause of claimed costs, and why an RCCC coordinator would have the skill to discover such design problems. As we stated in our rebuttal testimony, the RCCC technician is unlikely to have the skill to detect such design problems.

Furthermore, this example demonstrates that Verizon has modeled the wrong process step, and seeks to recover costs for its own mistakes as a non-recurring cost. If the order was "provisioned" incorrectly as the result of the designed process managed by the CPC's OSS (i.e. TIRKS), the correct resolution

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43 Verizon's Response to AT&T/WCOM 10-148.

would not be an appropriate non-recurring cost. CLECs should not have to bear the costs for Verizon's mistakes.

In the event, the CLEC ordered incompatible network elements, the order must be returned to the CLEC for correction. Therefore, the RCCC technician would not be resolving the "design problems" with CPC, but with the CLEC, thus the task description is incorrect. In either case, the task as Verizon has portrayed it is an incorrect assumption of non-recurring cost and should not be allowed.

Q. RELATIVE TO COMPLEX SERVICE SUCH AS A DS1 IOF, VERIZON ASSERTS "NO SYSTEM OF WHICH WE ARE AWARE CAN 'ELECTRONICALLY DESIGN' SUCH AN ELEMENT 98% OF THE TIME AS AT&T/WORLDCOM APPARENTLY AND ERRONEOUSLY ASSUME."[44] DID AT&T/WORLDCOM ASK TO SEE THE FALLOUT PRODUCED BY THE OSS FOR THIS ORDER TYPE?

A. Yes. In AT&T/WCOM 9-35 we asked for Verizon to produce copies of orders for the DS1 IOF element. Verizon objected to this request as well. The output from FACS/TIRKS OSS would have demonstrated the manual involvement if any required of the DS1 or DS3 interoffice facility.

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44 Verizon NRC Panel Rebuttal at 26.

Q. PLEASE DESCRIBE THE COMPONENTS THAT ARE NECESSARY FOR THE UNBUNDLED INTEROFFICE FACILITY (DS1 & DS3)?

A. As part of its recurring cost study, Verizon submitted IOF Transport Section #1 Study Overview, Subsection #1.3 Cost Study Methodology that describes the IOF facility as:

> Network elements (NE) are the major equipment components of circuit designs such as SONET add-drop Multiplexer, electronic digital cross-connect machines, D4 channel banks, fiber cable, poles, and conduit. Investments for these items begin with obtaining current contract prices from the VERIZON purchasing organization. Information from vendors and/or Verizon's engineering organization enables the prices to be compiled into typical equipment configurations. A complete price configuration includes vendor engineering, installation, transportation, right to use fees (software), and discounts. Each NE is configured to operate at its maximum practical capacity to determine a total price. The total price is then divided by the DS-0 capacity to produce an equivalent price per DS-0 circuit that rides through the NE. NE investments are produced by applying VERIZON loadings to these prices. The loadings include power, land, buildings, forward-looking utilization, and installation.

Thus, according to Verizon, it determines and includes the cost of the components that will be necessary to interconnect the CLEC's equipment to its network, . Most notable is the fact that the recurring cost study includes all of the vendor engineering, installation, transportation, right to use fees (software) and discounts. In addition "each [network element] is configured to operate at its maximum practical capacity to determine a total price." Therefore, the interconnection activity (of the ILEC's equipment) would be limited to placing the electronic cross-connects at the DCS that connect the ILEC's DS1 network elements to the CLEC's DS1 that was cabled and installed as part of the collocation arrangement.

Verizon maintains the inventory of interoffice facilities that transverse the ILEC's network between Central Offices in the TIRKS system. The Network Engineering recurring cost would include all OSS inventory necessary to reflect the network. The operation of the TIRKS system during the service order provisioning process would automatically construct an available path of the inventoried interoffice facilities between the ILEC's equipment and the CLEC's equipment. The "temporary" interconnections of the interoffice facilities, which would be the non-recurring cost activities, amount to an instruction that is sent via the OSS to the OPS/INE that establishes the electronic cross-connect.

Q. DID VERIZON'S NON-RECURRING COST MODEL REFLECT THE SAME ACTIVITIES TO INTERCONNECT THE INTEROFFICE FACILITY (DS1 & DS3)?

A. No. Notably, the portion of the Verizon non-recurring cost model regarding the activities needed to provision and install the unbundled IOF begin with the so-called flow-through percentages that Verizon has included in its non-recurring cost model. For example, Verizon has assumed that the service ordering activity will flow-through Verizon's OSS 48.6% of the time. As we have already explained and in our reply testimony, this assumption suggests that the OSS can recognize a properly formatted request and pass it along to the provisioning/activation OSS. Verizon did not produce any service ordering OSS output to prove AT&T/WorldCom's point that the process is automated. The question that remains open is the identification of the fallout and its causes. Although asked, Verizon has yet to produce any verifiable information as to the cause of its assumed fallout.

Verizon's provisioning activity (and flow through) includes the RCCC, which shows a worst case involvement of *****BEGIN VERIZON PROPRIETARY END VERIZON PROPRIETARY***** minutes. After Verizon's "forward-looking," adjustments, model reflects *****BEGIN VERIZON PROPRIETARY END VERIZON PROPRIETARY***** Thus, the RCCC involvement is only needed approximately half of the time. Verizon has only identified one task that is required on every order, RCCC Task #15, "[o]n plant test date, verify circuit for continuity and DD circuit is turned up to CLEC." This task represents a pre-completion inquiry via the OSS to see if the circuit has been turned up to the CLEC. Because this task is only a verification of the information in the OSS, the *****BEGIN VERIZON PROPRIETARY END VERIZON PROPRIETARY***** assigned to this task appears to be an inappropriate amount of time to perform a simple inquiry.

Considering what has been included in the recurring cost of the IOF facilities, then most, if not all, of the RCCC activities would be eliminated. As an example, the recurring cost study includes all costs associated with the network element placement, thus no dispatch of technicians to place equipment is necessary and, as a result, no cost for this activity should be reflected as a non-recurring cost. Moreover the cross-connect between the CLEC's equipment and the ILEC's network is accomplished electronically via the DCS, therefore all additional CO wiring is unnecessary.

In addition any cost associated with equipment placement is recovered via recurring charges. This would also include the inventory that is maintained in the TIRKS system. Verizon has also included Network Engineering (for the DS3, which was recovered in the recurring rates as described above). If the TIRKS inventory is included as part of the recurring costs, then the likelihood of CPC-Specials involvement should also be reduced to reflect only CLEC-caused fallout. As this example shows, the Verizon non-recurring cost model includes many costs as non-recurring that should be recovered in the forward-looking recurring charges.